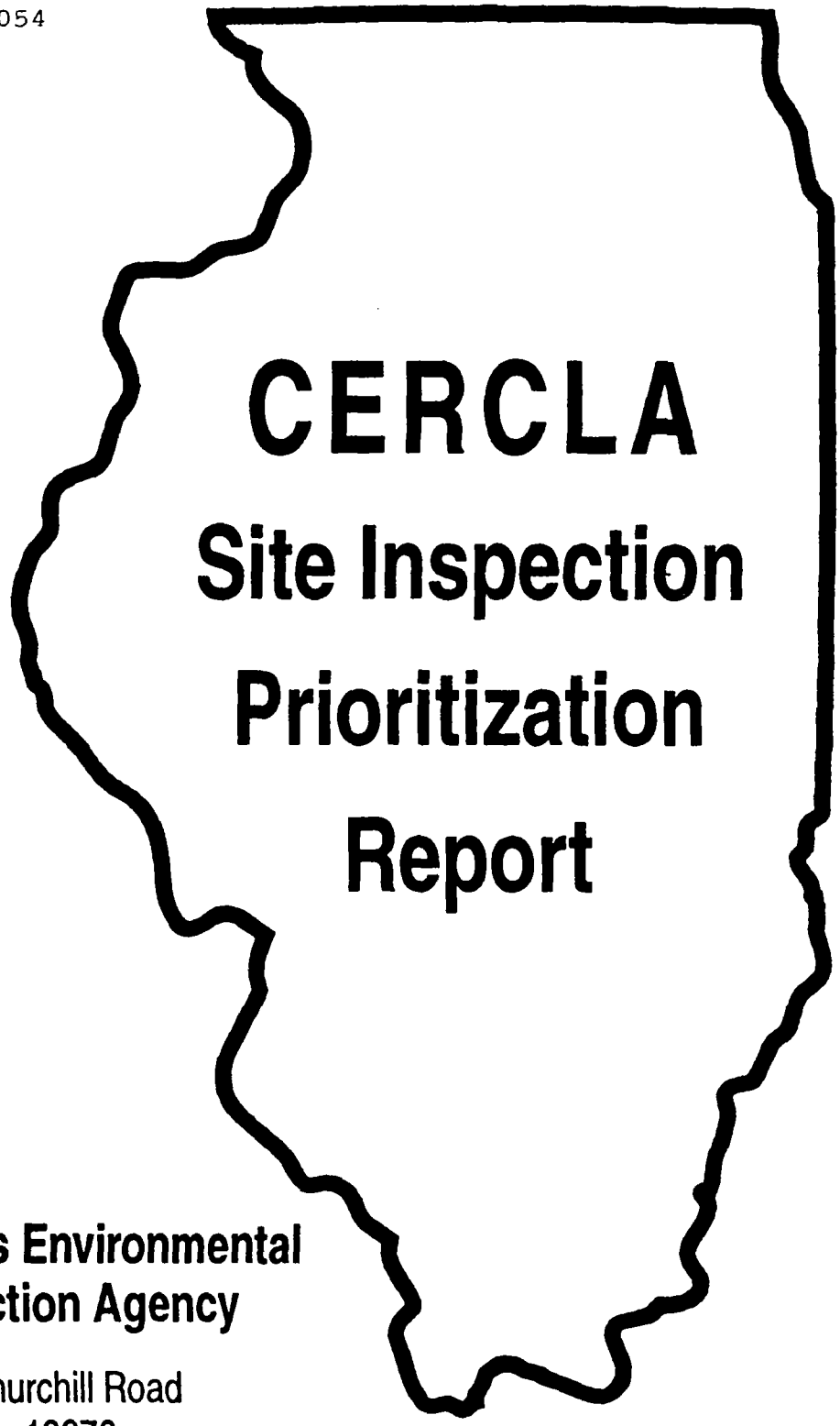
L1618100015
John Deere Harvester
ILD 025423054
SF/HRS



CERCLA
Site Inspection Prioritization Report

Illinois Environmental Protection Agency

2200 Churchill Road
P. O. Box 19276
Springfield, IL 62794-9276

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-0281

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APPENDIX

1. INTRODUCTION

On September 27, 1994 the Illinois Environmental Protection Agency's (IEPA) Site Assessment Program was tasked by the United States Environmental Protection Agency (U.S. EPA) to conduct a CERCLA Site Inspection Prioritization (SIP) of the active John Deere Harvester site located in East Moline, Illinois.

John Deere Harvester was added to CERCLIS (Comprehensive Environmental Response, Compensation and Liability Information System) on August 1, 1980. The site was evaluated in the form of a CERCLA Preliminary Assessment completed on July 1, 1983 and a Superfund Site Inspection conducted on May 30, 1984. Both of these activities were completed by the Region 5 Field Inspection Team (FIT) contractor Ecology and Environment. The FIT site inspection included collecting four surface water samples from the Mississippi River which lies adjacent to the property. In April, 1995 the IEPA's Site Assessment Program prepared and submitted a workplan for additional sampling to be conducted at the International Harvester site. The sampling portion was conducted on April 26, 1995 when the sampling team collected a total of five onsite soil samples from the old dump area and one background soil samples. No river sediment samples were collected due to river conditions at the time of the inspection.

The IEPA performed the CERCLA Site Inspection Prioritization activities at the site to fill information

gaps which may have existed in previous CERCLA investigations and to determine whether, or to what extent, the site poses a threat to human health and the environment. This SIP report represents the results of IEPA's evaluation and summarizes the site conditions and targets pertinent to the migration and exposure pathways associated with the site. This report is organized into five sections, including this introduction. Section two describes the site and gives a brief site history. Section three provides information about the SIP activities including the site reconnaissance, site representative interview and type sampling. Section four furnishes information about the potential sources of contamination. Section five provides information about the four potential migration and exposure pathways (groundwater migration, surface water migration, soil exposure and air migration).

2. SITE INFORMATION

2.1 SITE DESCRIPTION AND HISTORY

The John Deere Harvester site is located at 1100 13th Avenue in East Moline, Illinois. The site is described as being located in the Northeast Quarter, Section 25, and the Northwest Quarter, Section Thirty, Township Eighteen North, Range One East and One West. The property contains approximately 246 acres, with the parcel of concern consisting of an old dump area of approximately twelve acres adjacent to the Mississippi river. The manufacturing area is

covered under other authority but the old landfill was in operation prior to current regulations covering the disposal of wastes. Most of the property is covered with buildings used for manufacturing and gravel parking lots used for employee parking and equipment storage. The site is bordered by residential, commercial, recreational and industrial areas. The property is bordered by the Mississippi River on the northwest side, by private residences and J. I. Case manufacturing on the west, private residences and commercial buildings on the south and Hereford Park east of the site.

According to site representative interviews the property has been used for manufacturing agricultural implements since the turn of the century. The company is still in operation. Chemicals reportedly used during its many years of operation included paints, solvents and caustic materials and some of the wastes generated may have been placed in the dump area, which was used until 1975. It is presently closed and covered with dirt. The dump area was constructed in permeable alluvial soils adjacent to the Mississippi River and is not believed to contain a liner to prevent the potential leaching of substances into groundwater. The landfill is separated from the river by a flood control levee constructed by the Army Corps of Engineers.

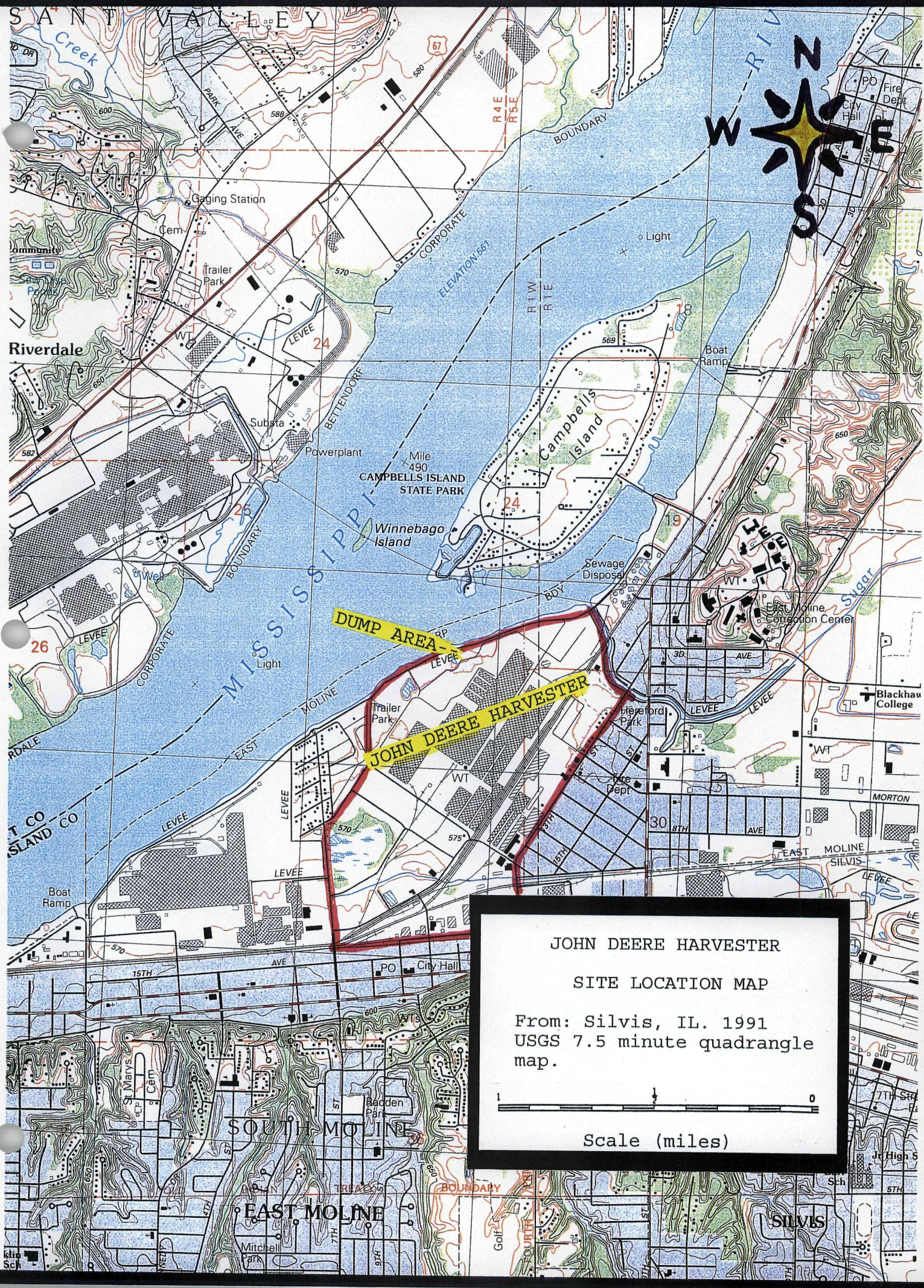
2.2 Applicability of Other Statutes

John Deere Harvester is regulated under RCRA (Resource Conservation and Recovery Act) as a full quantity generator.

The facility during its years of operation was not subject to the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), Atomic Energy Act (AEA), or Uranium Mill Tailings Radiation Control Act (UMTRCA).

Site Location

(figure 2-1)



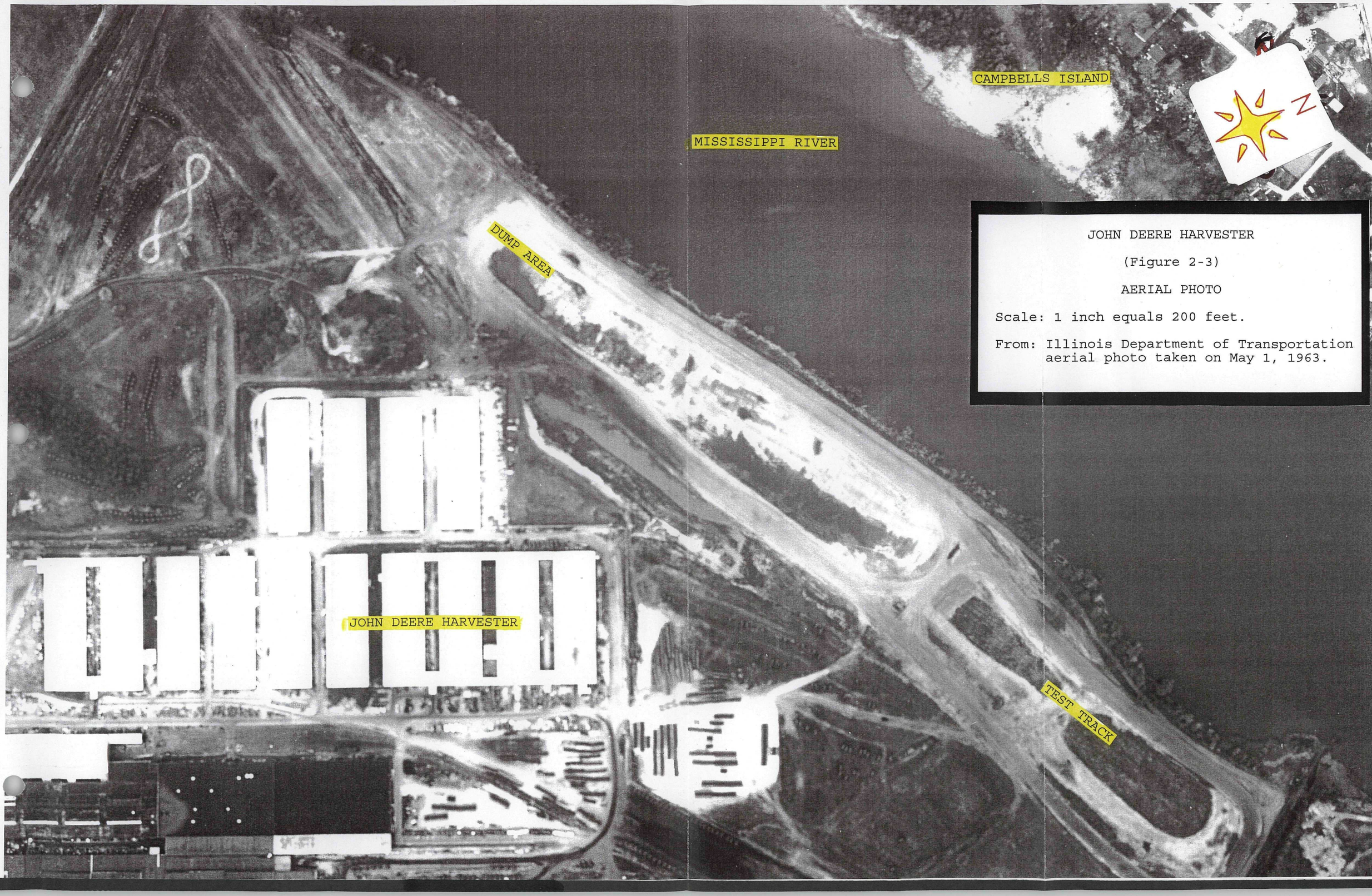
JOHN DEERE HARVESTER

SITE LOCATION MAP

From: Silvis, IL. 1991 USGS 7.5 minute quadrangle map.

1 ½ 0

Scale (miles)



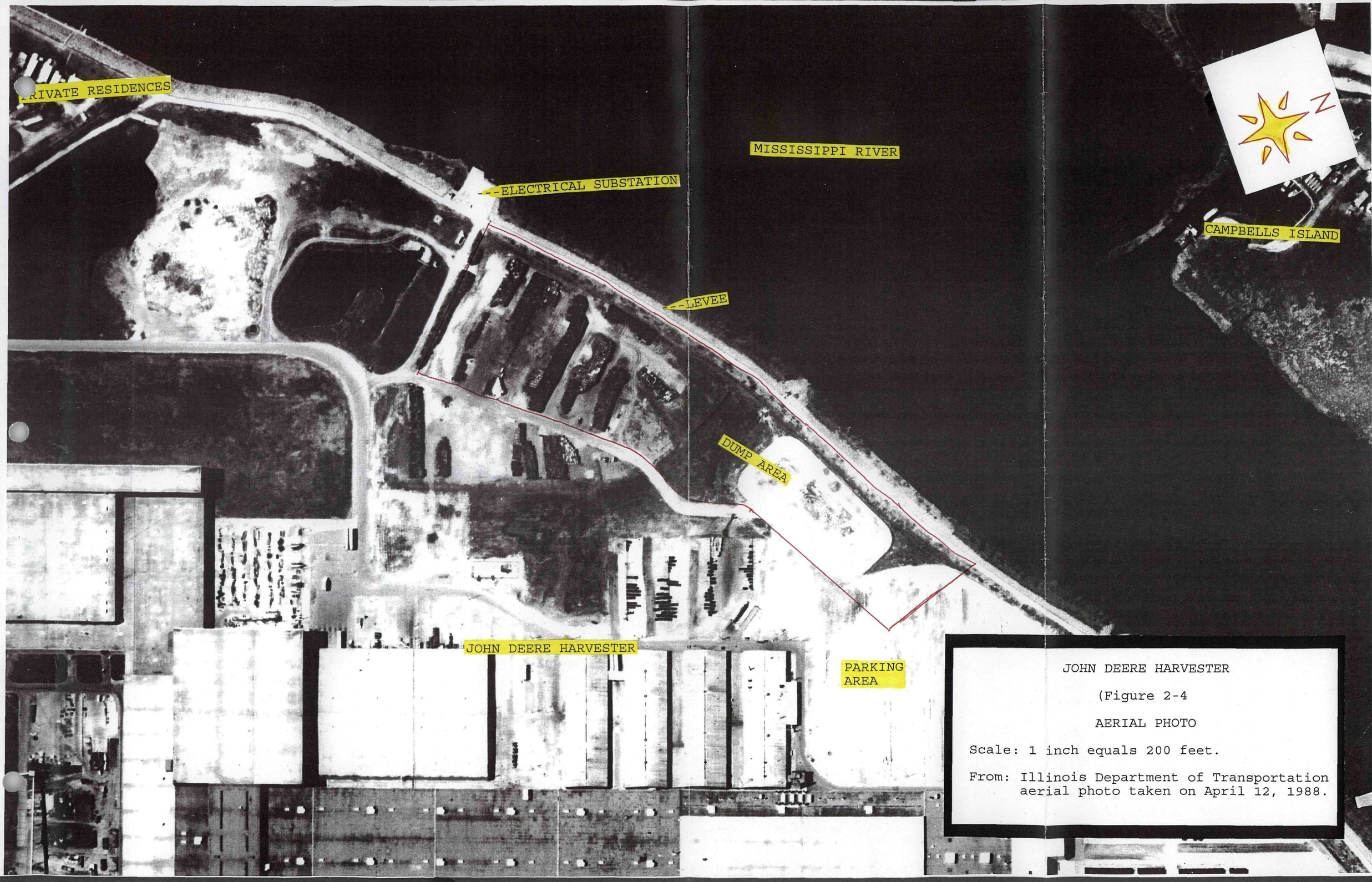
JOHN DEERE HARVESTER

(Figure 2-3)

AERIAL PHOTO

Scale: 1 inch equals 200 feet.

From: Illinois Department of Transportation aerial photo taken on May 1, 1963.



JOHN DEERE HARVESTER

(Figure 2-4

AERIAL PHOTO

Scale: 1 inch equals 200 feet.

From: Illinois Department of Transportation aerial photo taken on April 12, 1988.

3. SIP ACTIVITIES

3.1 RECONNAISSANCE ACTIVITIES AND SITE REPRESENTATIVE INTERVIEW

The site reconnaissance visit was conducted by Robert Casper of the Illinois Environmental Protection Agency on April 7, 1995 to determine potential sampling locations. The portion of the property where the manufacturing is currently conducted contains of a number of large buildings and a gravel drive between the manufacturing buildings and dump area. A gravel covered parking lot is located at the northeast end of the property and is used to store finished equipment. The area where the old dump is located is adjacent to the river levee and the southwest end of the dump has a ditch that leads into the Mississippi River. The runoff from the ditch is controlled by a flood gate and was closed on the day of the reconnaissance, due to the high water level in the river. A skim pond is located southwest of the ditch and water from this pond is reused after treatment. The water from this pond may at times enter the river if the pond would overflow.

3.2 SAMPLING ACTIVITIES

Sampling activities were conducted on April 26, 1995 when IEPA personnel collected a total of five onsite soil and one background soil sample. The purpose of these samples was to help determine if areas of contamination were present at the former dump area. Consequently, all five samples were

collected from this area. Sediment samples were originally planned to be taken to determine if the river had been impacted by previous site activities but could not be obtained due to the swift current and large rocks placed along the shore to prevent erosion. The results of the soil samples collected from the dump area are discussed in section 5 of this report. Table 3-1 describes each sample with its location, depth and physical appearance noted. Table 3-2 shows a summary of the analytical results and Table 3-3 provides a summary of key samples. Key samples are samples in which contaminants were detected at concentrations at least three times background levels, or had concentrations of potential health concern. Two analytes were found at levels that exceeded these health benchmark levels. These were Benzo(a)pyrene in samples X102 and X107, and arsenic in sample X105. Sample X105 also exceeded RAL levels for arsenic.

Removal actions levels

TABLE 3-1

Soil Samples

Sample Date Time	Depth	Location	Appearance
X101 4/26/95 16:15	0" to 2"	Background sample collected at Hereford Park, located adjacent to the west side of the John Deere Harvester property.	Black soil.
X102 4/26/95 10:00	12" to 14"	Collected on John Deere property approximately 95 feet east of the fence along the Mississippi River levee at the north end of the dump area.	Brown to black soil with cinders, green specks, some foundary sand.
X103 4/26/95 10:40	24" to 32"	Collected at the north side of the test track approximately 109 feet east of the Mississippi River levee fence.	Clay with cinders.
X104 4/26/95 11:35	24" to 30"	Collected approximately 150 feet east of the Mississippi River fence, 59 feet south of drainage ditch and 154 feet west of gravel road.	Silt, clay and cinders.
X105 4/26/95 12:10	20" to 30"	Collected near sample X104 from a clay layer.	Hard brittle clay.
X106 X107 4/26/95 12:50	12" to 15"	Collected approximately 125 feet east of the Mississippi River levee fence, 90 feet east and 150 feet north of the northeast corner of the electrical substation. Duplicate sample X107 also collected at this location.	Black soil and cinders.

SITE NAME: JOHN DEERE HARVESTER
ILD NUMBER: 025423054

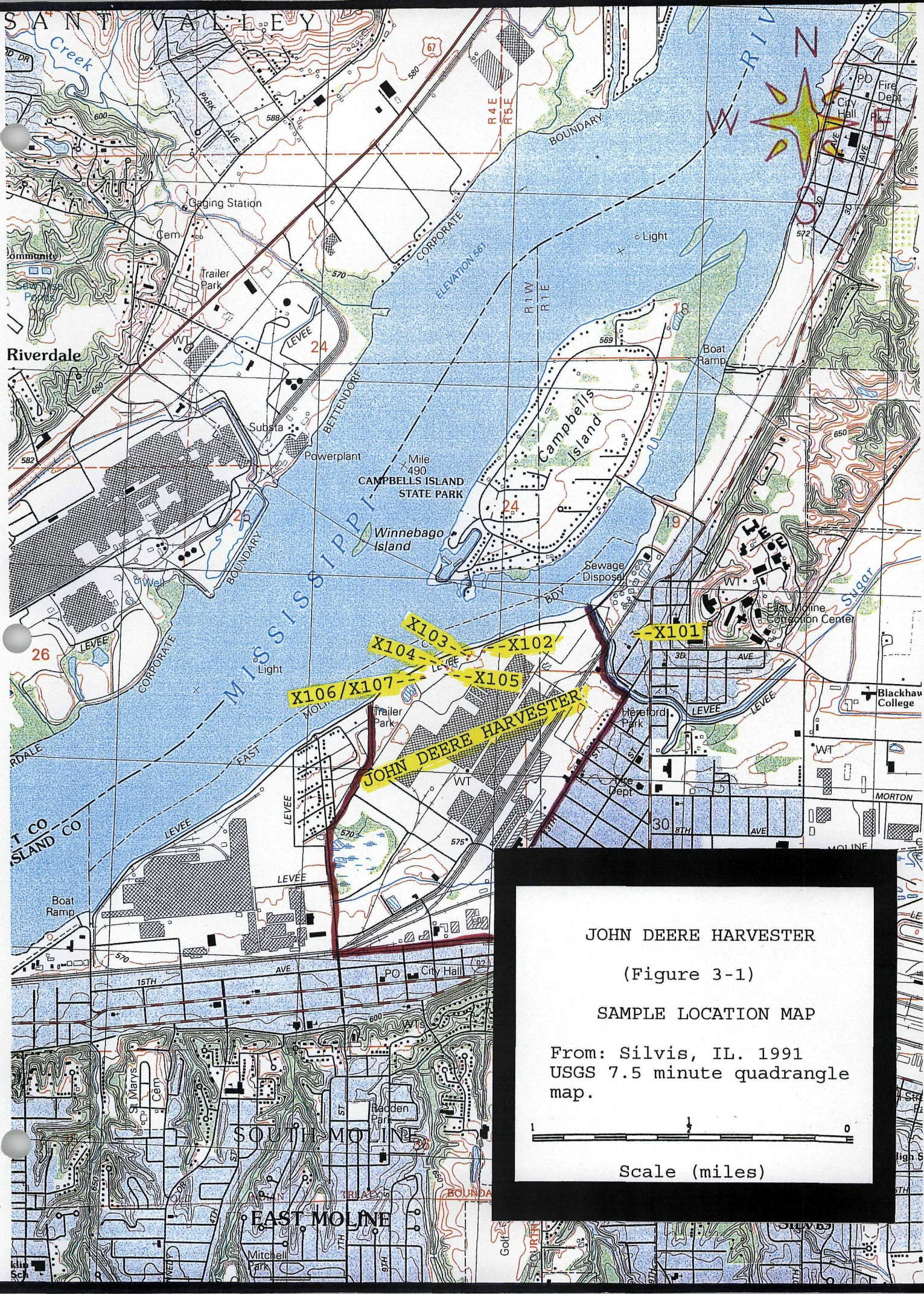
TABLE 3-2
SUMMARY

SAMPLING POINT	X101 4-26-95	X102 4-26-95	X103 4-26-95	X104 4-26-95	X105 4-26-95	X106 4-26-95	X107 4-26-95
PARAMETER	(Background)						
VOLATILES							
2-Butanone (MEK)	14 U	--	--	--	2 J	--	--
	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
SEMIVOLATILES							
Phenol	440 U	59 J	--	--	--	--	--
Naphthalene	440 U	99 J	--	--	--	65 J	--
2-Methylnaphthalene	440 U	87 J	--	--	--	56 J	--
Acenaphthylene	440 U	--	--	--	--	140 J	--
Dibenzofuran	440 U	38 J	--	--	--	120 J	--
Fluorene	440 U	--	--	--	--	120 J	--
Phenanthrene	52 J	200 J	--	260 J	50 J	1700	410
Anthracene	440 U	--	--	--	--	280 J	86 J
Di-n-Butylphthalate	440 U	200 J	--	--	--	--	--
Fluoranthene	99 J	180 J	--	310 J	94 J	1800	570
Pyrene	90 J	230 J	--	230 J	85 J	1600	500
Benzo(a)anthracene	56 J	260 J	--	170 J	65 J	890	390
Chrysene	68 J	360 J	--	210 J	65 J	1000	410
bis(2-Ethylhexyl)phthalate	97 J	--	--	42 J	74 J	52 J	88 J
Benzo(b)fluoranthene	100 XJ	310 XJ	--	270 XJ	100 XJ	1300 X	600 X
Benzo(k)fluoranthene	110 XJ	230 XJ	--	290 XJ	110 XJ	1500 X	650 X
Benzo(a)pyrene	49 J	230 J	--	140 J	52 J	820	340 J
Indeno(1,2,3-cd)pyrene	440 U	60 J	--	65 J	--	380	200 J
Dibenz(a,h)anthracene	440 U	48 J	--	--	--	91 J	52 J
Benzo(g,h,i)perylene	440 U	120 J	--	83 J	--	430	210 J
Carbazole	440 U	--	--	43 J	--	180 J	--
	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
PESTICIDES							
beta-BHC	2.30 U	--	--	--	--	--	0.32 JP
delta-BHC	2.30 U	--	--	0.015 JP	--	--	--
gamma-BHC (Lindane)	2.30 U	--	--	0.22 JP	--	0.12 JP	--
Heptachlor	2.30 U	5.00 B	--	6.70 B	--	4.50 PB	3.60 PB
Aldrin	2.30 U	1.60 J	--	0.69 JP	--	0.41 JP	0.11 JP
Heptachlor epoxide	0.086 JP	0.043 JP	--	--	--	--	--
Dieldrin	1.00 J	1.30 JP	--	4.00 JP	3.50 JP	--	3.40 J
4,4'-DDE	1.70 J	--	--	--	1.10 JP	--	0.83 JP
Endrin	4.50 U	--	--	0.21 JP	--	--	--
4,4'-DDD	4.50 U	0.29 JP	0.055 JP	--	13.00 P	--	8.90
Endosulfan sulfate	4.50 U	--	--	--	0.05 JP	--	--
4,4'-DDT	2.10 J	--	--	0.14 JP	7.10 P	--	0.27 JP
Methoxychlor (Mariate)	23.00 U	9.90 J	--	7.10 J	2.10 JP	5.80 JP	1.80 JP
Endrin Ketone	4.50 U	2.10 J	--	--	0.34 J	1.20 JP	0.68 J
Endrin aldehyde	0.54 JP	--	--	0.22 JP	--	0.099 JP	0.029 JP
alpha-Chlorodane	2.30 U	0.10 JP	--	--	--	0.14 JP	0.53 JP
gamma-Chlorodane	0.061 JP	0.081 JP	--	--	1.20 JP	0.06 JP	0.24 JP
Aroclor-1260	45.00 U	36.00 JP	--	--	--	--	--
	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
INORGANICS							
Aluminum	7880.00	10600.00	12400.00	8270.00	8400.00	4530.00	6200.00
Antimony	0.80 U	1.10 B	0.73 U	0.75 U	0.78 U	0.78 B	0.70 U
Arsenic	6.50	4.40	4.70	6.40	39.30	10.30	13.40
Barium	96.40	119.00	96.80	103.00	188.00	354.00	491.00
Beryllium	0.60 B	1.20	0.65 B	0.57 B	0.69 B	0.48 B	0.70 B
Calcium	25100.00	25000.00	3050.00	20200.00	20300.00	12800.00	17200.00
Chromium	16.20	47.70	16.60	19.00	19.90	25.40	43.80
Cobalt	7.30 B	4.30 B	9.70 B	7.90 B	11.40 B	8.20 B	11.90
Copper	17.70	28.40	9.90	16.70	20.40	85.80	119.00
Iron	16700.00	21400.00	20500.00	17800.00	22600.00	67200.00	103000.00
Lead	27.80	63.20	11.20	25.30	42.10	309.00	388.00
Magnesium	12600.00	12600.00	2530.00	9340.00	9060.00	1750.00	2220.00
Manganese	490.00	3240.00	1430.00	538.00	1080.00	625.00	909.00
Mercury	0.13 U	0.11 U	0.12 U	0.12 U	0.13 U	0.16	0.20
Nickel	17.20	14.90	14.10	16.10	19.70	22.20	30.90
Potassium	1490.00 U	640.00 B	501.00 B	847.00 B	880.00 B	535.00 B	815.00 B
Selenium	1.10 U	0.95 B	0.97 U	1.10 B	1.00 B	2.30	4.90
Sodium	108.00 B	235.00 B	482.00 B	156.00 B	214.00 B	154.00 B	234.00 B
Thallium	1.30 U	2.40	2.20 B	1.50 B	1.70 B	1.70 B	1.20 B
Vanadium	25.50	7.70 B	26.80	22.20	30.60	15.50	24.90
Zinc	73.80	27.50	50.30	94.00	109.00	404.00	389.00
Cyanide	0.66 U	0.57 U	0.61 U	0.62 U	0.65 U	0.58 U	0.59
	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg

SITE NAME: JOHN DEERE HARVESTER
ILD NUMBER: 025423054

TABLE 3-3
KEY SAMPLES
SUMMARY

SAMPLING POINT	X101	X102	X103	X104	X105	X106	X107
	4-26-95	4-26-95	4-26-95	4-26-95	4-26-95	4-26-95	4-26-95
PARAMETER	(Background)						
VOLATILES							
SEMIVOLATILES							
Phenanthrene	52 J	200 J	--	260 J	--	1700	410
Fluoranthene	99 J	--	--	310 J	--	1800	570
Pyrene	90 J	--	--	--	--	1600	500
Benzo(a)anthracene	56 J	260 J	--	170 J	--	890	390
Chrysene	68 J	360 J	--	--	--	1000	410
Benzo(b)fluoranthene	100 XJ	310 XJ	--	--	--	1300 X	600 X
Benzo(k)fluoranthene	110 XJ	--	--	--	--	1500 X	650 X
Benzo(a)pyrene	49 J	230 J	--	--	--	820	340 J
	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
PESTICIDES							
Dieldrin	1.0 J	--	--	4.0 JP	3.5 JP	--	3.4 J
4,4'-DDT	2.1 J	--	--	--	7.1 P	--	--
	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
INORGANICS							
Antimony	0.8 U	1.1 B	--	--	--	--	--
Arsenic	6.5	--	--	--	39.3	--	--
Barium	96.4	--	--	--	--	354.0	491.0
Copper	17.7	--	--	--	--	85.8	119.0
Iron	16700	--	--	--	--	67200	103000
Lead	27.8	--	--	--	--	309.0	388.0
Manganese	490	3240	--	--	--	--	--
Mercury	0.13 U	--	--	--	--	0.16	0.20
Selenium	1.1 U	--	--	--	--	2.3	4.9
Sodium	108 B	--	482 B	--	--	--	234 B
Thallium	1.3 U	2.4	2.2 B	1.5 B	1.7 B	1.7 B	--
Zinc	73.8	--	--	--	--	404.0	389.0
	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg



JOHN DEERE HARVESTER

(Figure 3-1)

SAMPLE LOCATION MAP

From: Silvis, IL. 1991 USGS 7.5 minute quadrangle map.

4.0 IDENTIFICATION OF SOURCES

4.1 Contaminated Soil

During the 1995 CERCLA Site Inspection Prioritization sampling event a total of five onsite soil samples were collected from the dump area. Analytical results from these samples document the presence of a number of analytes at concentrations which meets the CERCLA program's criteria for observed contamination. The potential exists that the some contaminants could enter the Mississippi River from runoff through an existing ditch or groundwater to surface water discharge. This point is explained in greater detail in Section 5.2 under Surface Water Migration Pathway.

4.2 Potential Unknown Sources

The landfill area was used until 1975 and it is unknown if other wastes including drums, tanks or offsite wastes could have been buried and contain hazardous materials. There are no known records of what materials may have been deposited in the landfill during its early years of operation.

5.0 MIGRATION PATHWAYS

5.1 Groundwater Pathway

According to area well logs the geology of the East Moline area consists of an eroded river terrace consisting of silt and sand of approximately 35 feet deep. Below this is the Pennsylvanian age system containing shale with sandstone, limestone and coal. This geological unit is varies in depth from 30 to 400 feet and is considered to be an aquitard. Underlying the Pennsylvanian System is the Silurian System composed of dolomite ranging in depth from 200 to 375 feet.

Groundwater is used in the area and there are a number of municipal wells within the groundwater pathway 4-mile target distance limit. The nearest municipal well is located approximately 1.7 miles east-southeast of the site and is one of five Sylvis community wells. The nearest known private well is located approximately two miles southeast of the site. Within the four-mile target distance are several towns that are contiguous to the city of East Moline. Not all of these communities utilize groundwater for their water supplies. Some area towns have surface water intakes along the Mississippi River.

No groundwater samples were collected during the CERLA SIP because the John Deere Harvester site has no monitoring wells onsite.

5.2 Surface Water Pathway

The Site is separated from the Mississippi River by a levee. A skim pond discharges to a drainage ditch that leads through a gate and into the river when the water level permits. During periods of high water (as on the day of the CERCLA SIP inspection) the gate is closed to prevent the river from backflowing onto the John Deere Harvester property. The 15-mile surface water pathway is entirely in the Mississippi river which flows west and southwest past the cites of East Moline, Moline and Rock Island Illinois, and Bettendorf and Davenport, Iowa. Surface water is used by local communities for drinking water. The nearest intake is located approximately .3 of a mile downstream of the site. Three additional intakes are located at approximately 4.1, 6.0 and 7.4 miles downstream of John Deere Harvester. The Mississippi River is used for recreation and fishing. The closest wetland is located onsite and according to the Illinois Department of Conservation there is one federally endangered, one state endangered and one state threatened species of mussels in the river in the vicinity of John Deere Harvester.

Although no surface water samples were collected during the April 26, 1995 CERCLA Site Inspection Prioritization, the potential exists that contaminants could enter the Mississippi River via groundwater, site runoff through the flood control gate, or a serious flood.

3. Air Pathway

The site is located in a mixed industrial and residential area in the Quad Cities area. There are an estimated 57,760 people who live within a four mile radius of the site. The nearest school is located approximately 1.2 miles southeast of the property and private residences are located adjacent to the southwest side of the property. During the CERCLA inspection a number of subsurface soil samples were collected and no releases to the air were documented.

5.4 Soil Exposure Pathway

The John Deere Harvester property has been used for manufacturing for approximately one hundred years. Private residences lie southwest of the site and a school is approximately 1.1 mile south. The site is surrounded by fencing and has guards present to limit access through gates to authorized people only. The property has no features that would make it attractive to children or trespassers. The site has no recreational value, however the levee along the Mississippi River has a walking path on top and is used by strollers, joggers and bicyclists. Samples collected onsite had three locations where concentrations exceeded levels of potential human health concerns. The following table shows the analytical results of these samples:

Sample	Benzo(a)pyrene	Arsenic	Manganese
X102	230 J ppb	--	3240 ppm
X105	--	39.3 ppm	--
X106	820 ppb	--	--
SCDM Benchmark	80 ppb	.33 ppm	2900 ppm
RAL	--	8-200 ppm	--

APPENDIX A

SITE 4-MILE RADIUS MAP

JOHN DEERE HARVESTER


1/4 MILE
1/2 MILE
1 MILE
2 MILES
3 MILES
4 MILES
JOHN DEERE HARVESTER
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
SITE: JOHN DEERE HARVESTER
ILD: 025423054
USGS TOPOGRAPHIC MAPS
NAME: DAVENPORT E. DATE: 1993
NAME: SILVIS DATE: 1973
NAME: PORT BYRON DATE: 1975
NAME: MILAN DATE: 1993
NAME: COAL VALLEY DATE: 1980
NAME: GREEN ROCK DATE: 1975
MAP SCALE (miles)
LEGEND
SITE LOCATION
PUBLIC WELL
PRIVATE WELL
SURFACE WATER INTAKE
ILLINOIS
QUADRANGLE LOCATION

APPENDIX B

15-MILE SURFACE WATER MAP

JOHN DEERE HARVESTER

PPE

DUMP AREA

JOHN DEERE HARVESTER

15 MILES DOWNSTREAM

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY		SITE: JOHN DEERE HARVESTER ILD: 025423054
15-MILE SURFACE WATER MAP		LEGEND □ SITE LOCATION ▽ PUBLIC WELL ○ PRIVATE WELL ⬡ SURFACE WATER INTAKE
NAME: DAVENPORT EAST DATE: 1988	NAME: SILVIS DATE: 1988	
NAME: MILAN DATE: 1988	NAME: ANDALUSA DATE: 1988	
MAP SCALE (miles)		QUADRANGLE LOCATION

APPENDIX C

TARGET COMPOUND LIST

JOHN DEERE HARVESTER

TARGET COMPOUND LIST

Volatile Target Compounds

Chloromethane	1,2-Dichloropropane
Bromomethane	cis-1,3-Dichloropropene
Vinyl Chlorde	Trichloroethene
Chloroethane	Dibromochloromethane
Methylene Chloride	1,1,2-Trichloroethane
Acetone	Benzene
Carbon Disulfide	trans-1,3-Dichloropropene
1,1-Dichloroethene	Bromoform
1,1-Dichloroethane	4-Methyl-2-pentanone
1,2-Dichloroehtene (total)	2-Hexanone
Chloroform	Tetrachloroethene
1,2-Dichloroethane	1,1,2,2-Tetrachloroethane
2-Butanone	Toluene
1,1,1-Trichloroethane	Chlorobenzene
Carbon Tetrachloride	Ethylbenzene
Vinyl Acetate	Styrene
Bromodichloromethane	Xylenes (total)

Base/Neutral Target Compounds

Hexachloroethane	2,4-Dinitrotoluene
bis(2-Chloroethyl) Ether	Diethylphthalate
Benzyl Alcohol	N-Nitrosodiphenylamine
bis (2-Chloroisopropyl) Ether	Hexachlorobenzene
N-Nitroso-Di-n-Propylamine	Phenanthrene
Nitrobenzene	4-Bromophenyl-phenylether
Hexachlorobutadiene	Anthracene

2-Methylnaphthalene	Di-n-Butylphthalate
1,2,4-Trichlorobenzene	Fluoranthene
Isophorone	Pyrene
Naphthalene	Butylbenzylphthalate
4-Chloroaniline	bis(2-Ethylhexyl)Phthalate
bis(2-chloroethoxy)Methane	Chrysene
Hexachlorocyclopentadiene	Benzo(a)Anthracene
2-Chloronaphthalene	3-3'-Dichlorobenzidene
2-Nitroaniline	Di-n-Octyl Phthalate
Acenaphthylene	Benzo(b)Fluoranthene
3-Nitroaniline	Benzo(k)Fluoranthene
Acenaphthene	Benzo(a)Pyrene
Dibenzofuran	Ideno(1,2,3-cd)Pyrene
Dimethyl Phthalate	Dibenz(a,h)Anthracene
2,6-Dinitrotoluene	Benzo(g,h,i)Perylene
Fluorene	1,2-Dichlorobenzene
4-Nitroaniline	1,3-Dichlorobenzene
4-Chlorophenyl-phenylether	1,4-Dichlorobenzene

Acid Target Compounds

Benzoic Acid	2,4,6-Trichlorophenol
Phenol	2,4,5-Trichlorophenol
2-Chlorophenol	4-Chloro-3-methylphenol
2-Nitrophenol	2,4-Dinitrophenol
2-Methylphenol	2-Methyl-4,6-dinitrophenol
2,4-Dimethylphenol	Pentachlorophenol
4-Methylphenol	4-Nitrophenol
2,4-Dichlorophenol	

Pesticide/PCB Target Compounds

alpha-BHC	Endrin Ketone
beta-BHC	Endosulfan Sulfate
delta-BHC	Methoxychlor
gamma-BHC (Lindane)	alpha-Chlordane
Heptachlor	gamma-Chlordane
Aldrin	Toxaphene
Heptachlor epoxide	Aroclor-1016
Endosulfan I	Aroclor-1221
4,4'-DDE	Aroclor-1232
Dieldrin	Aroclor-1242
Endrin	Aroclor-1248
4,4'-DDD	Aroclor-1254
Endosulfan II	Aroclor-1260
4,4'-DDT	

Inorganic Target Compounds

Aluminum	Manganese
Antimony	Mercury
Arsenic	Nickel
Barium	Potassium
Beryllium	Selenium
Cadmium	Silver
Calcium	Sodium
Chromium	Thallium
Cobolt	Vanadium
Copper	Zinc
Iron	Cyanide
Lead	Sulfide
Magnesium	

DATA QUALIFIERS

QUALIFIER	DEFINITION ORGANICS	DEFINITION INORGANICS
U	Compound was tested for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture. For soil samples subjected to GPC clean-up procedures, the CRQL is also multiplied by two, to account for the fact that only half of the extract is recovered.	Analyte was analyzed for but not detected.
J	Estimated value. Used when estimating a concentration for tentatively identified compounds (TICS) where a 1:1 response is assumed or when the mass spectral data indicate the presence of a compound that meets the identification criteria and the result is less than the sample quantitation limit but greater than zero. Used in data validation when the quality control data indicate that a value may not be accurate.	Estimated value. Used in data validation when the quality control data indicate that a value may not be accurate.
C	This flag applies to pesticide results where the identification is confirmed by GC/MS.	Method qualifier indicates analysis by the Manual Spectrophotometric method.
B	Analyte was found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.	The reported value is less than the CRDL but greater than the instrument detection limit (IDL).
D	Identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor as in the "E" flag, the "DL" suffix is appended to the sample number on the Form I for the diluted sample, and all concentration values are flagged with the "D" flag.	Not used.
E	Identifies compounds whose concentrations exceed the calibration range for that specific analysis. All extracts containing compounds exceeding the calibration range must be diluted and analyzed again. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses must be reported on separate Forms I. The Form I for the diluted sample must have the "DL" suffix appended to the sample number.	The reported value is estimated because of the presence of interference.
A	This flag indicates that a TIC is a suspected aldol concentration product formed by the reaction of the solvents used to process the sample in the laboratory.	Method qualifier indicates analysis by Flame Atomic Absorption (AA).
M	Not used.	Duplicate injection (a QC parameter not met).

N	Not used	Spiked sample (a QC parameter not met).
S	Not used.	The reported value was determined by the Method of Standard Additions (MSA).
W	Not used.	Post digestion spike for Furnace AA analysis (a QC parameter) is out of control limits of 85% to 115% recovery, while sample absorbance is less than 50% of spike absorbance.
*	Not used.	Duplicate analysis (a QC parameter not within control limits).
+	Not used.	Correlation coefficient for MSA (a QC parameter) is less than 0.995.
P	Not used.	Method qualifier indicates analysis by ICP (Inductively Coupled Plasma) Spectroscopy.
CV	Not used.	Method qualifier indicates analysis by Cold Vapor AA.
AV	Not used.	Method qualifier indicates analysis by Automated Cold Vapor AA.
AS	Not used.	Method qualifier indicates analysis by Semi-Automated Cold Spectrophotometry.
T	Not used.	Method qualifier indicates Titrimetric analysis.
NR	The analyte was not required to be analyzed.	The analyte was not required to be analyzed.
R	Rejected data. The QC parameters indicate that the data is not usable for any purpose.	Rejected data. The QC parameters indicate that the data is not usable for any purpose.